City of Norton, Kansas

Electricity Resource Plan (2007-2011)

INTRODUCTION

The purpose of the electricity resource plan is to set a course for Norton's municipal electric utility to follow in considering all reasonable opportunities to meet future energy service requirements using demand-side management techniques, new renewable resources, and other programs that will provide customers with electricity at the lowest possible cost. With regard to this planning process, demand-side management techniques are activities the utility can undertake to encourage its customers to use electricity differently. Renewable resources are those electricity sources that are continuously or cyclically renewed by the natural ecological cycle; for example, solar, wind, hydroelectric, geothermal and biomass sources.

The Norton municipal electric utility is submitting this plan to the Western Area Power Administration (Western) as its response to the regulations of Western's Energy Planning and Management Program. This is the third plan submitted to Western. Subsequent plans are to be filed every five years.

Consistent with Western's regulations, this electricity resource plan and the plan actions to be implemented over the next five years are directed at considering reasonable opportunities to meet the utility's future electric energy requirements using demand-side management techniques, new renewable resources and other programs that will provide the utility's customers with electricity at the lowest possible cost, while minimizing, to the extent practicable, adverse environmental effects.

The planning process involves 1) describing key elements of the utility and its service territory, 2) forecasting the electricity needs of the utility's customers, 3) assessing the sources of electricity supply, 4) assessing the demand for electricity, 5) exploring the opportunities for demand-side

management programs and 6) establishing an action plan. The remainder of the report is organized along these six steps.

CURRENT PROFILE OF THE MUNICIPAL ELECTRIC UTILITY

Norton, the "Pheasant Capital of Kansas" and county seat of Norton County, is located northwestern Kansas where U.S. Highway 36 intersects with U.S. Highway 283. The current population is 2,806 for Norton and 5,953 for the County. Norton regards itself as the "service center for northwest Kansas" because its governmental, medical, financial, educational, retail, business and transportation services employ more than one-third of the labor force in northwest Kansas. Agriculture is the largest industry and dominant factor in the area's economic development. Wheat, grain sorghum, corn, alfalfa and oats are the leading grains produced, and the raising of cattle and hogs accounts for a substantial part of the agricultural output.

The major employers in area are the 43-bed Norton County Hospital, the Norton Correctional Facility, the Valley Hope Treatment Center, New Age Industrial Plant, Miltech, Natoma Corporation, the county and city governments, the school district, and the nursing home. During the fall and winter, pheasant and quail hunting adds to the economic activity in the area. Fishing, boating and hunting are available at the nearby 5,700-acre Norton Wildlife Area.

Some business activity flows to Oberlin, Kansas, a town of 1,994 located forty miles west. Another business center in the area, Colby, Kansas, with a population of 5,450, is sixty miles southwest. The City is fairly well isolated from major metropolitan areas. The distance to Denver is 289 miles, while Kansas City is 350 miles away.

Norton is Norton County's largest town, representing 50% of the County's population. The sparse and declining population trend in both the City and the County is a defining characteristic. Historical populations are as follows:

Year	Norton	Norton County
1970	3,637	7,279
1980	3,400	6,689
1990	3,020	6,200
2000	3,012	5,953

In the last thirty years, the populations in Norton and the County have declined by 17% and 18%, respectively. As with most rural areas in Kansas, the population loss is generally attributed to a lower number of births than deaths during the past thirty years, exacerbated by the migration of younger people for economic opportunity elsewhere. An additional contributing factor is the consolidation of farming operations.

While total population in the area has trended downward, the "age 65 and over" group increased slightly. This is indicative of a common problem in rural Kansas, where smaller communities struggle to keep and attract the businesses that will prevent the younger work force from migrating to urban centers. At the same time, the number of farms in the county is decreasing and older people are moving from their farms into the towns. As a result, in Norton, the "age 65 and over" group comprised 24.6% of the population in 2000, while the percentage for the entire county, including Norton, was 19.6%. This compares to a statewide percentage of 13.3%.

Employment opportunities in the area are limited and the workforce has been migrating to larger cities. As a result, the unemployment rate ranges at a low 2-4% while wage rates are below the state averages. The per capita personal income in 2000 was $16,835 for the County and $16,438 for Norton, compared to $20,506 for the State.

The average daily minimum winter temperature is approximately 17 degrees and the average daily summer high is over 86 degrees. Three-quarters of the average annual precipitation of 18 inches falls from April through September. Snowfall averages about 27 inches annually. The topography of Norton is hilly to level in some areas.

Norton supplies electric, water and sewer utility services to the community. The City owns the asphalt-concrete municipal airport. Also, the City operates a public swimming pool, lighted tennis courts and various park facilities. Natural gas service is provided by Midwest Energy, Inc. Prairie Land Electric Cooperative (Prairie Land) provides electric service to the area surrounding the City's electric service territory. Through its electric interconnection with Prairie Land, the City electric utility purchases power from Sunflower Electric Power Corporation (Sunflower) and the Western Area Power Administration (Western).

The City's electric utility serves primarily the territory within the city limits. The service territory is 97 percent urban and 3 percent rural. Weather is the key determinant of the electric peak load, with the summer cooling load driving the system peak. The monthly average minimum and maximum temperatures are listed on Schedule 1.

The utility has a rate for residential customers and a rate for commercial and industrial customers. Kilowatthour sales are divided among major customer groups approximately as follows: residential 46%, commercial 47%, and industrial 7%. Growth in total electricity sales for the five years ending 2006 averaged around 1.7% per year. (See Schedule 2.)

The utility experienced its greatest peak of 9,575 kW on July 20, 2005. The utility's peak demand has been in the 8,760 to 9,460 kW range. The historical peak loads shown on Schedule 3 depict growth rates during the past seven years of around 1.1%.

With regard to the market potential for residential electricity sales, there were 1,516 housing units in Norton, according to the 2000 Census, compared to 1,485 in 1990. Of the recent total, 66% were owner-occupied, 22% were renter-occupied and 12% were vacant. From 1990 to 2000, there were 99 housing units built in Norton. When unit retirements are considered, no significant net housing growth is expected.

For commercial and industrial electricity sales, the major employers in the utility's service territory are the New Age Industrial Company with 120 employees, the County Hospital with 93 employees, nursing home with 77 employees, alcohol and drug treatment center with 62 employees and the Jamboree Grocery Store with 55 employees. In comparison, the City of Norton has around 36 employees. The outlook for new business customers is uncertain given the lack of population growth in the area.

Norton competes with other small communities in rural Kansas for commerce, industry and population, and views its electric rates as one factor in remaining competitive. Norton wants its electric rates to be at least comparable to those charged by other utilities in the area. Norton's rates compare favorably to the rates of the electric cooperative providing retail electric service to the surrounding rural areas.

The utility's electric energy sources consist primarily of purchased power. As indicated on Schedule 4, purchased power has represented over 95% of the energy supply during the last five years. City-owned generation is used primarily as a backup power source if transmission problems interrupt delivery of purchased power.

While City-owned generation is not a principal source of electric energy, the generation capacity is a critical component of the power supply mix because this capacity enables the utility to purchase interruptible economy energy from Sunflower. City-owned generation capacity is rated at 11,250 kW. In addition to the 11,250 kW in generating capacity, the City utility purchases 2,500 kW of firm power from the Western Area Power Administration (Western). (See Schedule 4.) and 3,000 kw of firm power from Sunflower Electric.

The total 16,750 kW in generated and purchased capacity is more than adequate to meet the utility's peak day requirements. The utility has been supplying summer peak demands in the range of 8,760 to 9,575 kW. Given a targeted 18.0% capacity reserve margin and its current capacity sources, the utility can serve a peak load of at least 12,000 kW.

The City owns its electric utility for the benefit of the community. As such, the utility's objective is to contribute to the City's overriding goal of providing its citizens with the highest quality and most affordable community living. Consistent with this broad goal, the utility seeks to minimize the price of electricity to all of its customers while providing reliable service. As an additional benefit to the community, the utility provides free electricity to the municipal airport; for street lighting as well as lighting at the race track; to the library, museum, and police station; to the city offices, parks and swimming pool; and for ballfield lighting and fair rides at the City park. Also, the City expects the utility to produce net revenues that can be transferred, in most part, to the City's general fund.

The entire City payroll totals about 34 full-time employees. The electric department has eight full-time employees and one part-time employee: six full-time employees and one part-time employee at the power plant and two on the line crew. The five general administrative employees spent a part of their time on electric department matters. Because of the utility's small scale

of operations, the addition of simply a single-employee integrated resource planning department would have a significant financial impact on operations. In comparison, six of the ten largest electric customers employ more people than the entire City workforce.

LOAD ANALYSIS AND FORECAST

Annual peak demand and energy sales are expected to increase moderately over the five-year planning horizon, from 2007 to 2011. As shown on Schedule 7, total energy usage is expected to increase 2.23% annually, from 31,074 MWh in 2002 to 33,100 MWh in 2006. The corresponding peak demand is expected to increase from 9,410 kW in 2002 to 9,910 kW in 2006, an average annual increase of 1.30%.

The moderate 1.3% to 2.2% growth rates reflect the slow population and economic growth in the utility's service territory. Norton's population has been decreasing and is not expected to do much more than hold steady in the future. No significant commercial development is expected. Another factor indicating limited growth is the fact that the utility serves a fixed territory that is reaching maturity in terms of customer density.

SUPPLY-SIDE ASSESSMENT

Electricity is supplied mostly with purchases from Sunflower and Western. (See Schedule 4.) The supply from Sunflower is interruptible economy energy for which the City utility qualifies because it can meet its peak demand with generating capacity and firm purchased capacity. The Western power supply provides the City with 7,426 MWh annually.

Schedule 8 presents operating statistics on the utility's generators. The five units are small (1,000 kW to 3,500 kW) internal combustion generators, installed between 1955 and 1977. The units are used primarily during the summer months when Sunflower exercises its right to interrupt deliveries of economy energy. City generation is also used as emergency backup for times when the interconnection with Prairie Land is down.

While internal generation is a major capacity source, most energy is purchased from Sunflower and Western. (See Schedules 4 and 9.) Of the

31,074 MWh total energy required during 2002, the utility purchased 7,426 MWh from Western (WAPA), under a firm-power contract that expires September 30, 2024. Another 29,469 MWh was purchased from Sunflower under its economy energy schedule. Only 1,605 MWh was generated.

The long-term viability of the Western (WAPA) power supply is uncertain because of Congressional discussions about privatization. Currently, Western (WAPA) power is economically marginal, costing 36 mills at a time when regional utilities have been reducing their rates and power marketers are offering wholesale customers competitive prices. If Western is privatized and its rates increased materially as a consequence, this source would become uneconomical in the competitive marketplace for wholesale power.

To improve the efficiency of its electricity supply role, the utility has been reducing distribution line losses by replacing primary and secondary lines with new, properly installed lines, by clearing lines of trees and brush, and by installing new transformers and repairing loose connections. Also, the utility is in the final phase of converting a major portion of its distribution system from 4,160 volts to 12,470 volts.

DEMAND-SIDE ASSESSMENT

The utility classifies its customers into residential, commercial and industrial categories.

Load is greatest in the summer months as air conditioning use increases. The utility can expect an annual peak sometime during July or August. As can be seen from Schedule 10, the utility experienced a 38.1% load factor for 2006, which is on the high side of the typical range for small towns in rural Kansas. Peak demand during non-summer months runs about 53% of the summer peak. Non-summer monthly load factors are higher than in summer months, but this occurs while load is well below the utility's 13,750 MW capacity. Overall, the utility has more than adequate capacity to meet peak demand and could increase its utilization of fixed costs by expanding off-peak sales. The result would be higher revenues and the ability to reduce rates

The utility's major customers are typical among those found in a small rural Kansas community that serves as a commercial center for the area. In this instance, the utility's six largest customers make up 34% of total commercial and industrial sales and 18% of total sales. The customers are the New Age Industrial, which produces aluminum products, the Norton County Hospital, the Jamboree Grocery Store, the Andbe Nursing Home, McDonald's Restaurant and the Valley Hope Treatment Center.

Losing a large customer from the group described above is an ever-present risk for the utility, for two reasons. First, the regional economy is too small to provide much business diversity and the population in the area has been declining. Relative to the size of the total customer base, each large customer is significant to the utility. Second, the utility's service territory is small and established by law. Prairie Land Electric Cooperative serves the area surrounding Norton's defined territory. This means that a customer can be lost if it relocates by just a mile or two. Fortunately, the health care facilities, the school district and the government offices are much less susceptible to relocation.

Load curves for typical days during the on-peak summer months and during the off-peak winter months are drawn on Schedule 5. The utility's existing 13,750 kW capacity (with reserves) would be more efficiently used if sales were increased anytime during winter months and between 10 PM and 10 AM during the summer months.

The marginal cost of supplying more energy during off-peak hours is about 40 mills/kWh before distribution losses, which represents the energy rate under the Sunflower economy energy rate. Distribution line losses are estimated at between 8% and 11%. The marginal cost of supplying more capacity (or the avoided cost of reducing peak load) is zero up to 12,000 kW. Given the forecasted peak demand of about 9,800 to 9,900 kW, there is room for supplying additional demand at zero marginal cost.

Although marginal costs vary by season and during the day, the utility doesn't offer seasonal or time-of-day rate differentials. Both retail rate schedules have a declining block energy charge, where the highest-use block is priced at 62.5 mills for residential and 45.0 mills for commercial and industrial customers. With the automatic energy cost of adjustment added,

the highest block rates are about 83.5 mills for residential and 66.0 mills for commercial and industrial. See Schedule 11 for the monthly retail rates.

With regard to demand-side measures, the utility has been improving the City's use of electricity by replacing streetlights with high-efficiency fixtures, adding insulation in city facilities, installing energy-efficient appliances and motors in city facilities and upgrading the lighting at the race track and parking lots.

The utility works with individual customers to help them use electricity more efficiently and to insure the delivery of quality power. For example, the utility conducts amperage tests on primary line loadings and adjusts the load by alternating power line phases. Also, utility personnel work with larger customers to improve their power factors. Essentially, Norton is a small town with a community atmosphere linking the utility department with its customers. Commercial and industrial customers and utility workers know each other personally, and have built cooperative working relationships. Utility employees are available to advise large customers on ways to install new equipment and upgrades. In this manner, an informal demand-side management program has been in place for years.

OPPORTUNITIES FOR DEMAND-SIDE MANAGEMENT PROGRAMS

Utility management considered how well the various demand-side management (DSM) objectives applied to the utility's supply and demand situation and the utility's operational goals. Six load shape objectives that might be accomplished by DSM were considered:

1. peak shaving,
2. load shifting,
3. strategic conservation,
4. flexible load shape,
5. valley filling, and
6. strategic load growth.

Peak shaving is not appropriate because the utility has more than adequate capacity, meaning its avoided capacity cost is zero. New capacity might be needed in ten years, but there is too much uncertainty about load growth to justify instituting peak-shaving DSM programs today. Because load shifting and strategic conservation include peak shaving, in combination with valley filling or conservation, they were rejected as well, for the same zero-avoided-cost reason.

Flexible load shape DSM programs are primarily directed at decreasing winter and summer peak demand by targeting water heater and air conditioning end uses. A flexible load shape program to control air conditioning is an option the utility will consider in the future, especially if peak demand growth over the next five years increases faster than currently forecasted.

The most appropriate DSM load shape objective is valley filling during the summer months and strategic load growth during the winter months. The valley filling programs would be designed to increase demand during the summer months, between 10 PM and 10 AM. Schedule 5 shows the potential for increasing off-peak sales during the summer. The winter daily load curve drawn on Schedule 5 indicates that strategic load growth programs directed at increasing winter demand throughout the day are appropriate. Both valley filling during the summer and strategic load growth during the winter would increase sales volumes within the existing capacity

capability. By increasing sales within the same fixed cost parameter, the utility would be accomplishing its overall goal of minimizing the price of electricity to its customers.

Energy conservation for City services is cost justified. The utility provides free electricity to the municipal airport; for street lighting; to the library, museum, police station and, to the city offices, parks and swimming pool; and for ballfield lighting at the City park. Because City use is metered but not billed, any reductions in sales to the City would be a net benefit in the amount of the cost of the energy saved.

After deciding on valley filling and strategic load growth as the load shape objectives, the utility management then selected criteria for evaluating DSM programs. The five quantitative criteria considered were:

1. the revenue requirements test,
2. the total resource cost test,
3. the societal test,
4. the participant test, and
5. the rate impact measure test.

As used for this integrated resource plan, the revenue requirements test measures the cost-effectiveness of a DSM program by comparing the utility's costs before and after implementing a DSM program. If it is cheaper for the utility to pay for a DSM program that conserves energy or reduces load than to provide the equivalent amount of power, then the program passes the revenue requirements test. The DSM program participants' (customers') costs and lost revenues are ignored. The revenue requirements test was not used because it cannot be used to evaluate valley filling and strategic load growth programs, where additional energy costs are incurred. Also, the revenue requirements test fails to consider the rate impact on non-program participants.

The rate impact of a DSM program on non-participants is crucial to the utility's viability. As already discussed, the city's economy is dependent on a limited number of commercial and industrial businesses. Neither the utility nor the City can afford to lose a major customer to surrounding utility company or to a neighboring community. Customer electricity rates are too important to be ignored in evaluating DSM programs.

The total resource cost test is similar to the revenues requirements test, except that it includes costs paid by program participants and ignores the cost of incentives paid by the utility to program participants. The total resource cost test was rejected as well, because it too cannot evaluate load-building programs and fails to consider rate impacts.

The societal test is considered to be the same as the total resource cost test except it is expanded to include externalities such as environmental costs. As with the total resource cost test, the societal test doesn't consider rate impacts.

When used to initially screen potential DSM programs, the participant test can be useful. The participant test focuses on the economics of the program participants, and seeks to answer the question of whether the program will attract participants on its economic merits.

Given the DSM load-shaping goals of load building and the critical need to keep all rates competitive, the rate impact measurement test was selected as the appropriate quantitative criteria for evaluating DSM programs. The rate impact measurement (RIM) test considers what happens to average rates when a DSM program changes operating revenues and costs. A DSM program fails the RIM test if it results in an increase in electricity rates. One weakness with the RIM test is that, when either marginal revenues or costs deviate from the forecast, the test might justify certain load building programs where marginal costs exceed marginal revenues. To minimize this possibility, the utility will need to continually monitor each RIM-justified DSM program to see that revenue and cost assumptions are still operative.

One important consideration that affects all DSM activities is the threat of retail competition. The Kansas legislature passed legislation in 1996 providing for a 3-year moratorium on electric retail wheeling in Kansas and creating a Retail Wheeling Task Force to provide a report with recommendations to the legislature. Currently, the issue is dormant in light of the California debacle, yet there remains a possibility that retail wheeling in some form will be introduced in a future legislative session. Retail wheeling will mean that any DSM activities that tend to increase rates for the utility's major customers will also increase the risk of losing those customers to competitive suppliers.

Another factor regarding the feasibility of DSM activities is the utility's lack of economies of scale. The utility simply doesn't have the sales volume to justify large DSM programs. As can be seen by reviewing Schedule 6, Summary of Revenues and Expenditures, the addition of just one employee to oversee DSM programs would have a significant impact on net income. For this reason, any DSM activities must recognize and work within the limited budget of a small utility.

UTILIZING THE PLAN

Consistent with the timeframe set out in the regulations of Western's Energy Planning and Management Program, this integrated resource plan will cover the five years 2007 to 2011. The plan is defined by the following basic parameters:

1. there is sufficient capacity to meet projected load growth and adequate power supply arrangements are in place.
2. the load shape objectives are valley filling during the summer and strategic load growth during the winter.
3. energy conservation for City services would be beneficial.
4. the rate impact measurement (RIM) criteria is appropriate.
5. budgetary constraints and the effect of DSM activities on utility transfer payments are critical.
6. the existing informal working relationship between the utility and its customers is producing DSM results.

City of Norton, Kansas
Electricity Resource Plan (2007-2011)
Climate Data - Monthly and Annual Normals

	Temperature			Degree Days		
	Min	Max	Mean	Heating	Cooling	Precip.
January	15 3	41 5	28 4	1,135	-	0.41"
February	19 0	45.3	32.2	918	-	0.39"
March	25.4	52.7	39.1	793	-	1 18"
April	35.3	63.6	49.5	465	4	1.30"
May	45.6	72.3	59.0	211	26	3.49"
June	55.2	83.4	69.3	33	173	3.19"
July	61.4	89 8	75.6	5	320	2 87"
August	59.1	87.3	73.2	10	266	1.80"
September	50 0	78 0	64.0	108	112	1 57"
October	37.6	66 5	52.1	400	-	0.90"
November	25 7	51.6	38.7	789	-	0 69"
December	17.0	42 0	29 5	1,064	-	0.41"
Annual	37 2	64 5	50.9	5,931	901	18.20"

Monthly normals for the Goodland, Kansas, reporting station.

Schedule 2

City of Norton, Kansas
Electric Resource Plan (2003 - 2006)
Energy Sales, Customers and Average Use

	2003	2004	2005	2006
Energy Sales (MWh):				
Residential	11,432	10,883	11,634	11,342
Commercial	12,133	11,821	12,188	12,151
Industrial	1,883	2,096	2,535	2,307
Free city use	1,214	1,262	1,290	1,207
Losses	3,534	3,187	2,945	3,782
Total Retail	30,196	29,249	30,592	30,789
Revenues (thousand dollars):				
Residential	1,039	999	1,257	1,396
Commercial	1,003	990	1,218	1,405
Industrial	132	150	223	243
Total Retail	2,174	2,139	2,698	3,044
Number of Customers (meters):				
Residential	1,452	1,466	1,456	1,455
Commercial	333	328	316	305
Industrial	2	2	2	2
Total Retail	1,787	1,796	1,774	1,762
Average use per Customer (kWh):				
Residential	7,873	7,424	7,990	7,795
Commercial	36,435	36,040	38,570	39,839
Industrial	941,500	1,048,000	1,267,500	1,153,500

City of Norton, Kansas
Electricity Resource Plan (2007-2011)
Peak Loads

Date	Time	KW
August 18, 1995	5:00 PM	8,940
July 20, 2004	4:00 PM	8,910
July 20, 2005	4:00 PM	9,575
August 9, 2006	5:00 PM	8,950

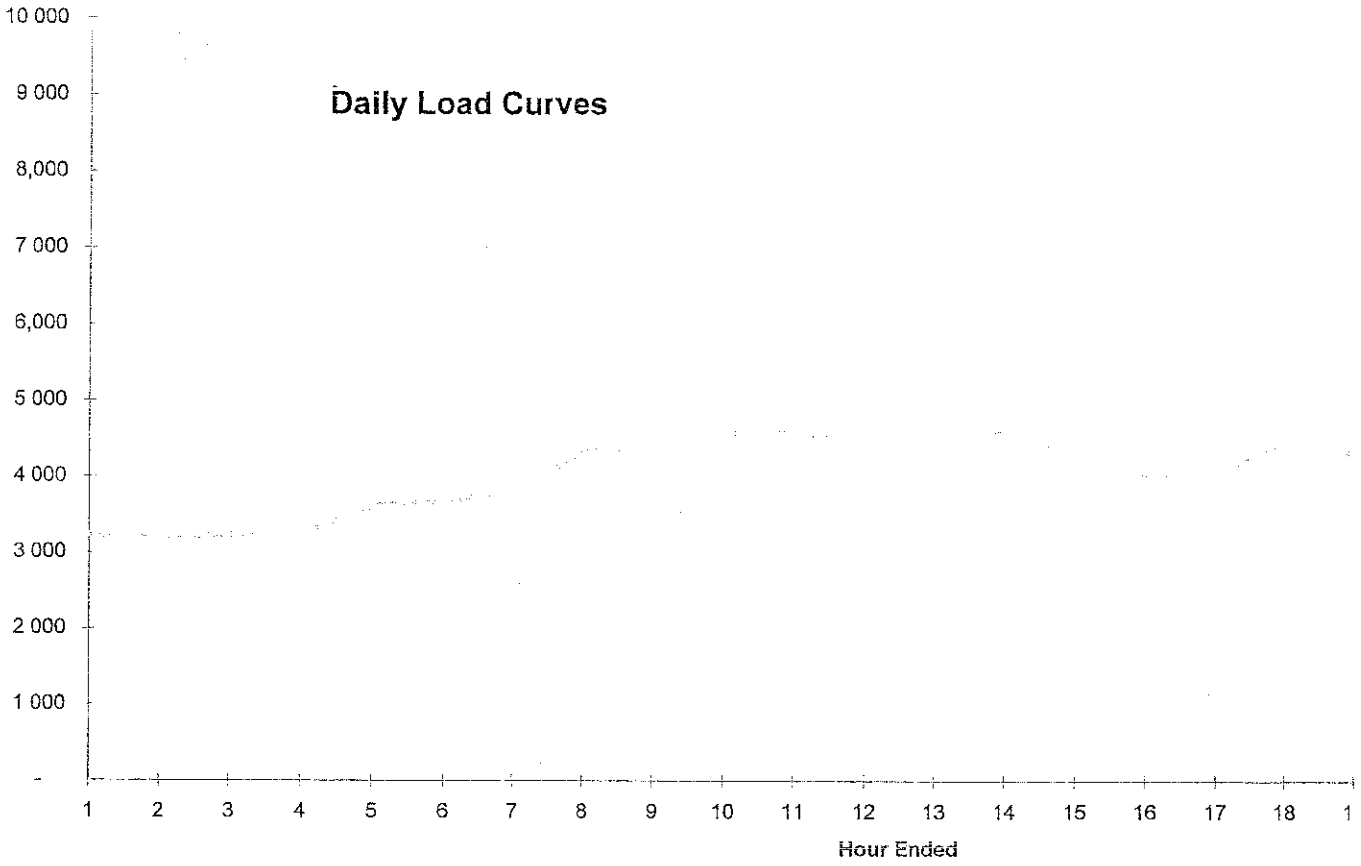
Growth Rate 2007 to 2011 1

Schedule 4

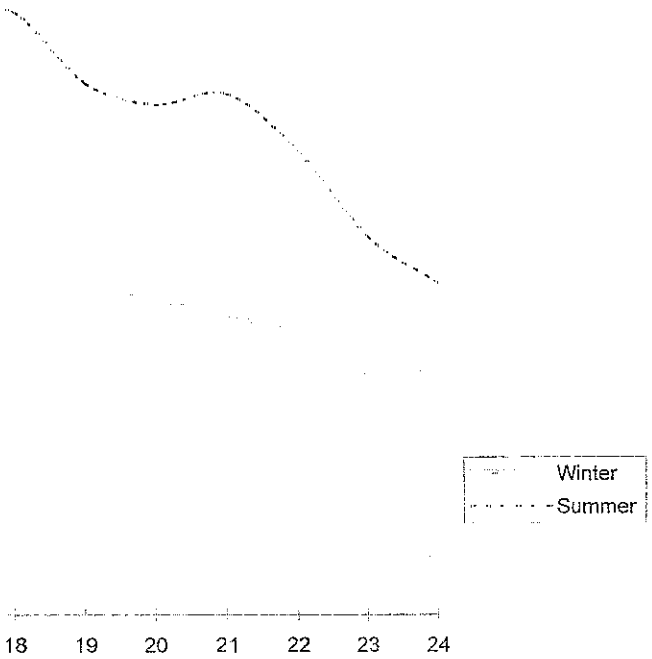
City of Norton, Kansas
Electricity Resource Plan (2002-2006)
Sources of Electric Energy (kWh)

Source	2002	2003	2004	2005	2006
ENERGY (kWh):					
City Generation	1,604,800	1,973,400	233,600	1,547,700	1,150,200
Purchased Power:					
Sunflower	22,361,785	28,498,000	29,385,000	29,323,000	29,812,000
Western (WAPA)	742,600	-	-	-	-
Total	24,709,185	30,471,400	29,618,600	30,870,700	30,962,200
Percent Generated	5.1%	6.5%	0.8%	5.0%	3.7%
Percent Purchased	94.9%	93.5%	99.2%	95.0%	96.3%
Percent Western	23.7%	0.0%	0.0%	0.0%	0.0%
CAPACITY (kW)					
City Generation	11,250	11,250	11,250	11,250	11,250
Purchased Power:					
Sunflower	-	-	-	-	-
Western (WAPA)	2,500	2,500	2,500	2,500	2,500
Total	13,750	13,750	13,750	13,750	13,750

Integrated Resource Plan (1997-2001)

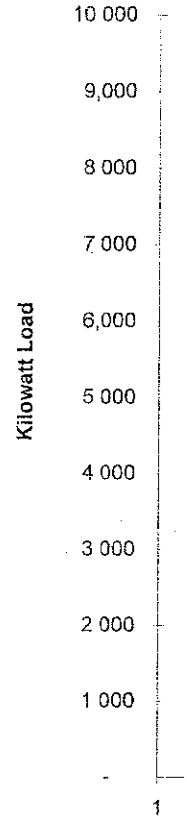


Integrated Resource Plan (1997-2001)



Integrated Resource Plan (1997-2001)

Norton data, as the pattern:			Norton, using the pattern: Winter peak 4,585 calc. Summer peak 9,085	
Hour Ended	Winter	Summer	Winter	Summer
100	600	635	3,236	3,594
200	590	596	3,183	3,374
300	600	561	3,236	3,176
400	600	603	3,236	3,413
500	670	552	3,614	3,125
600	680	549	3,668	3,108
700	710	663	3,830	3,753
800	800	947	4,315	5,360
900	820	1,107	4,423	6,266
1000	850	1,137	4,585	6,436
1100	850	1,264	4,585	7,155
1200	825	1,315	4,450	7,443
1300	825	1,357	4,450	7,681
1400	850	1,490	**4,585**	8,434
1500	800	1,500	4,315	8,491
1600	750	1,605	4,046	**9,085**
1700	750	1,425	4,046	8,066
1800	825	1,397	4,450	7,908
1900	800	1,234	4,315	6,985
2000	775	1,185	4,180	6,708
2100	725	1,209	3,911	6,843
2200	700	1,076	3,776	6,091
2300	575	880	3,102	4,981
2400	600	770	3,236	4,359
max.	850	1,605		



Winter peaking day is Thursday, February 29, 1996.
Summer peaking day is , July 19, 1996.

Schedule 6

City of Norton, Kansas
Electric Resource Plan (2003 - 2006)
Summary of Revenues, Expenditures and Cash Flow

	2003	2004	2005	2006
Operating Income				
Sales of electricity	2,181,557	2,149,105	2,708,421	3,059,873
Other operating revenues	57,100	76,873	84,978	119,895
Total operating revenue	2,238,657	2,225,978	2,793,399	3,179,768
Purchased power / generation	1,220,587	1,175,867	1,510,143	2,030,848
Other production expenses	277,669	305,921	207,655	343,113
Distribution expenses	139,608	129,105	157,294	167,544
Customer accounting/Administative	481,592	535,454	606,430	556,704
Debt Service	21,030	21,030	21,030	42,660
Total operating expenses	2,140,486	2,167,377	2,502,552	3,140,869
Operating income	98,171	58,601	290,847	38,899
TRANSFERS:				
Transfer to General Fund	6,754	7,366	0	0
Transfer to Electric Replacement	102,000	102,000	102,000	102,000

City of Norton, Kansas
Electric Resource Plan (2003 - 2006)
Load Forecast

	Energy Usage (MWh)						
Year	Residential Sales	Commercial Sales	Industrial Sales	City Services	Losses	Total	kW Peak
2003	11,432	12,133	1,883	1,214	3,534	30,196	8,940
2004	10,883	11,821	2,096	1,262	3,187	29,249	8,910
2005	11,634	12,188	2,535	1,290	2,945	30,592	9,575
2006	11,342	12,151	2,307	1,207	3,782	30,789	8,950

Schedule 8

City of Norton Kansas
Electricity Resource Plan (2007-2011)
Utility-Owned Generation

Unit	Year Installed	Rated kW	Fuel	Heat Rate	2003 Operations Hours Operated	2003 Operations kWh Generated	2004 Operations Hours Operated	2004 Operations kWh Generated	2005 Operations Hours Operated	2005 Operations KWh Generated	2006 Operations Hours Operated	2006 Operations Kwh Generated
#5 Worthington	1955	1 000	DF	12 000	52 40	37 400	12 90	8 100	10	5 300	20	15 600
#6 Worthington	1960	1 500	DF	12 000	71 50	76 200	2 90	1 500	95	105 100	814	1 105 200
#7 Enterprise	1963	2 500	DF	12 000	188 10	423 700	32 70	63 100	58	128 600	1	1 600
#8 Cooper-Bessemer	1968	3 750	DF	12 000	456 90	1 369 080	53 00	127 800	414	1 295 000	6	14 000
#9 General Electric	1977	2 500	O	12 000	33 40	67,100	19 50	33,100	7	13 700	8	13 800
Totals		11,250				1,973,480		233,600		1 547 700		1 150 200

Schedule 9

City of Norton, Kansas

Electricity Resource Plan (2003 - 2006)
Energy Sources

	2006		2005		2004		2003	
Source	kWh	Cost	kWh	Cost	kWh	Cost	kWh	Cost
Generation	1,150,200	$135,255.66	1,517,700	$175,443.15	233,600	$50,589.50	1,973,400	$167,937.36
WAPA	6,253,783	$180,810.09	6,090,920	$166,763.14	6,135,360	$164,082.59	6,409,632	$160,978.14
Sunflower	23,252,161	$1,714,782.66	23,626,945	$1,167,936.31	23,849,007	$961,194.46	22,087,937	$891,671.68
Totals	30,656,144	$2,030,848.41	31,235,565	$1,510,142.60	30,217,967	$1,175,866.55	30,470,969	$1,220,587.18

City of Norton, Kansas
Electricity Resource Plan (2007-2011)
Monthly Electricity Demand During 2002

Month	KWh Energy Input	KW Peak Load	Load Factor
January	2,320,791	4,705	66.3%
February	2,033,710	4,509	67.1%
March	2,217,072	4,901	60.8%
April	2,042,381	4,313	65.8%
May	2,243,376	4,117	73.2%
June	3,436,819	6,469	73.8%
July	4,098,417	9,410	58.5%
August	3,623,284	9,214	52.9%
September	2,650,410	7,548	48.8%
October	2,197,741	4,313	68.5%
November	2,164,006	3,921	76.7%
December	2,364,578	4,313	73.7%
Annual	31,392,585	9,410	38.1%

City of Norton, Kansas

Energy Resource Plan

Retail Rates (Monthly Billing)

Residential

Minimum bill	$4.00
Energy charge per kWh:	
First 80 kWh	$0.1769
Next 120 kWh	$0.1061
Over 200 kWh	$0.0991

Commercial and Industrial

Minimum bill	$4.00
Energy charge per kWh:	
First 100 kWh	$0.1910
Next 900 kWh	$0.1203
Next 14,000 kWh	$0.0991
Next 25,000 kWh	$0.0884
Over 40,000 kWh	$0.0743

An automatic monthly fuel and purchased power adjustment is applied to all kWh. The adjustment base is $0.03 per kWh.

City of Norton, Kansas
Electricity Resource Plan (2007-2011)
Demand-Side Management Programs - Long List

Valley Filling:
Residential:
Heat storage.
Security lighting.
Time-of-use rates

Small business and Commercial:
Cool storage.
Security lighting.
Battery storage system.
Time-of-use rates.

Strategic Load Growth:
Residential:
Add-on heat pump
Security lighting.
Seasonal rates.

Small business and Commercial:
Security lighting.
Induction heating.
Resistance heating.
Seasonal rates.